

**ENVIRONMENTAL PROTECTION AGENCY (EPA)  
Clean Diesel Funding Assistance Program FY 2016  
Request for Proposals (RFP)  
EPA-OAR-OTAQ-16-02**

**Project Title:** Diesel Generator Replacement Project – Chalkyitsik, Alaska

**Applicant Information:**

- Applicant (Organization) Name: Chalkyitsik Village Council

[illegible]

**Eligible Entity:** Chalkyitsik Village Council is eligible to apply under this RFP as it is the governing body of Chalkyitsik, Alaska which is a federally recognized tribe located in Interior Alaska. The population of Chalkyitsik is 74, with 99% being Alaska Native.

**Total Project Cost:**

EPA Funds Requested: \$215,688

**Mandatory Match: \$60,775**

Voluntary Cost Share: \$1,800

**Target fleet:** The applicant proposes a certified generator repower of two stationary, non-road diesel generators used for energy production in the power plant in Chalkyitsik, Alaska.

**Technology:** The applicant proposes a certified generator repower (the removal of existing generators and replacing them with newer, cleaner generators that is certified to a more stringent set of generators emissions standards), as specified in Section I.B.1.e of the RFP.

The Chalkyitsik Village Council appreciates that EPA has acknowledged in prior New Source Performance Standards (NSPS) rulings that use of marine generators in prime power applications in remote areas of Alaska is appropriate. Installation of Tier 3 marine generators with DERA funds, where applicable, will be in accordance with DERA and NSPS requirements.

**Short Project Description:** The applicant proposes to replace two stationary diesel generators located in the power plant in Chalkyitsik, Alaska, with certified Tier 3 generators.

## **Section 1. Project Summary and Overall Approach**

### **A. VEHICLES AND TECHNOLOGIES**

Chalkyitsik Village Council (CVC) power plant, seeks to collaborate on a certified engine repower project that will replace existing diesel generator(s), with newer and more efficient models. The Chalkyitsik Village Council is seeking grant funding to replace its two non-tiered diesel generators in the tribally owned power plant. With the support of this DERA funding, CVC will be able to replace the current Tier 0 mechanically regulated generators, with 2 certified Tier 3 marine jacketed electronically regulated generators, with appropriate PM controls drawn from the EPA RICE rule.

The [two](#) new generators will replace; *Unit 1 – 1995, 6 cylinder non-tiered Mechanical 125kw and Unit 2, 1995, 6 cylinder non-tiered Mechanical 65kw that are currently in place.* The 125kW and 65kW units have more than 3-years remaining useful life. The typical useful life of a prime power diesel generator in rural Alaska, operating at 1800 rpm, is 60,000+ hours, through rebuilds you can extend this indefinitely.

The use of Tier 3 marine generator is necessary because of their proven reliability in the harsh environment in rural Alaska. Tier 3 marine generators are equipped with electronically controlled governors and high-pressure common rail fuel systems, and are turbocharged and after-cooled, which improves performance and reduces emissions. Use of Tier 4 industrial generator in prime power applications in remote areas of Alaska is not viable due to lack of diesel exhaust fluid (urea) and ULSD fuel. Tier 3 industrial generators with exhaust gas recirculation (EGR) and variable geometry turbochargers have proven unreliable. Rural Alaska communities rely on diesel generators for 24-hour prime power. Reliability is the first priority in selecting a generator, as they serve as the means to provide for the health and welfare of the Chalkyitsik Native Village.

Heat recovery from diesel generators is among the most viable and efficient energy conservation measures available to rural Alaskan communities. Marine diesel generators equipped with water-jacketed exhaust manifolds considerably increase available [heat recovery](#) compared to an equivalent horsepower industrial generators. Currently, generators in Chalkyitsik recover heat that is then used by the school. With the new generators, Chalkyitsik will add the necessary piping to duplicate the heat recovery project. This voluntary cost-share is detailed in the budget, and includes the purchase of materials and labor required to duplicate this service. This voluntary improvement will enrich the environmental outcomes of the project.

As owner and operator of the utility, the Chalkyitsik Village Council will assume ownership of all facilities, equipment, and they will operate and maintain the generators. [The CVC utility is a standalone grid that uses diesel generators to produce power.](#) There are no maintained roads to Chalkyitsik, thus fuel delivery is accomplished [only](#) by airplane. [Chalkyitsik currently utilizes a wood-frame building that is 20'x 24' to house the generator set and service it's customers.](#) In this case, the population of Chalkyitsik is 74 with 44 Residential customers.

Rural communities in Alaska are not connected to the electrical grid and must generate their own electricity. Small diesel power plants are used for this purpose and many of the power plants in these communities rely on old technology, high emitting, non-certified diesel generators. The generators must be absolutely reliable to provide consistent power to the residents to ensure health and welfare. The current cost of electricity in Chalkyitsik according to a recently completed rate analysis is \$0.95 per kWh. The installation of newer, cleaner, appropriately sized generators will decrease fuel consumption, reduce emissions, and lower the cost of power.

Installing new, more efficient generators will both reduce the emissions per quantity of fuel combusted, as well as be more efficient, further reducing emissions, as well as saving money. In most rural communities, diesel is well over \$5.57 per gallon and can be significantly higher. Occasionally, a community may experience a fuel shortage if fuel transport is delayed. Again, increased fuel efficiency can make supplies last longer, reducing the chances of shortages.

**Restrictions for Mandated Measures:**

Marine Tier 3 generators have proven [to be](#) reliable and efficient [as](#) prime power [sources](#) in Alaska villages. Use of Tier 3 marine generators to repower non-certified industrial diesel generators does not conflict with DERA requirements, as use of marine generators in a stationary source application are not subject to the Restriction for Mandated Measures of the RFP and are exempt from the requirements of EPAs locomotive and marine rule.

**Certified Engine Repower Criteria:**

- a. Generator Function: The repowered generators will perform the same function as the existing non-certified generators [that](#) are currently in use.
- b. Replacement Specs: Due to technological improvements including electronically controlled governors, high pressure fuel system, variable valve timing, higher compression ratios, and multiple valves per cylinder, Tier 3 marine generators have more horsepower than non-certified generators of the same displacement. Because the DERA generators may need to be repowered gen-sets in existing power plants, generators horsepower will be electronically de-rated to match the existing generator, feeder conductors, and switchgear breaker electrical rating.
- c. Repower Scrappage: The non-certified engine block being replaced will be rendered permanently disabled and disposed of in a local land fill and documented in accordance with EPA procedure lined out in the RFP. The Local disposal takes into consideration the high cost of freight in rural Alaska.
- d. Early Attrition: Non-certified generators to be replaced with DERA funds all have more than 3-years remaining useful life. The typical useful life of a prime power diesel generator, operating at 1800 rpm, is 60,000+ hours. To provide reliability and redundancy, a rural Alaska power plant contains three or more prime power diesel gen-sets. Gen-sets are typically operated in a lead-lag configuration, so each generator typically runs between about one-third and on-half of the time, or about 3,000 to 4,000-hours a year. All non-certified generators replaced with DERA funds will have less than 50,000-hours of documented run time.

**Funding Restrictions:**

No DERA funding awarded will be used for; costs of emissions reductions that are mandated under federal law, matching funds for other federal grants, expenses incurred prior to the project period, emissions testing and/or air monitoring activities, for fueling infrastructure. The non-certified diesel generators proposed for replacement do not have less than 3 years useful life and do not operate less than 500-hours per year.

**2. ROLES AND RESPONSIBILITIES:**

Once the certified engine repower project is funded, the procurement of replacement generators will be performed by CVC, with the assistance of project partners TCC and AEA. CVC and its contractors will administer installation of the generators, with additional support from partners as needed.

In accordance with DERA cost-share requirements, DERA funds will cover 75% of the cost to; purchase and install the two generators and associated equipment, pay for freight, labor and materials needed to install the new generators, and implement required upgrades to interface the generators with the existing power plant cooling system and switchgear. The Chalkyitsik Village Council will cover the remaining 25% of the project with a cash match, and voluntary costs share by duplicating the heat recovery with the two new generators. Where remanufactured or rebuild generators are used they will be “certified Tier compliant”, in accordance with 40 CFR 1068.120.

Throughout the project, CVC will provide project management to ensure the timely completion of each task, and will be assisted by TCC Rural Energy Coordinator. CVC will manage the grant and work with

the EPA to ensure all grant requirements are met. CVC will post an RFP for a contractor and select the contractor with assistance from TCC. CVC will work with the contractor to oversee the installation and commissioning of the equipment and, at the conclusion of the project, CVC staff and contractor will inspect the final installation.

### 3. TIMELINE AND MILESTONES

The applicant proposes to begin work on the project on January 1, 2017; in accordance with the start date listed in Section II.D of the RFP, and will occur over a two-year project timeframe (January 1, 2017-December 31, 2018). The timeframe will allow for ample data collection on diesel consumption, comparison with previous years' fuel usage, and preliminary calculation of emissions reductions. Installation of the diesel generators will occur in the fall of 2017 with final reporting beginning in November and submitted by December 31, 2018.

Task 1: Bidding, procurement and transport of John Deere generators	(January-July 2017).
Task 2: Installation and commissioning in powerhouse	(August-October 2017).
Task 3: Preliminary data collection on fuel consumption in power plant	(Winter 2016- 2018).
Task 4: Final Report preparation and submission	(November - December 2018).

### Section 2. Project Location

#### A. PROJECT LOCATION:

Chalkyitsik power plant is located in the village of Chalkyitsik, [about 50 miles east of Fort Yukon](#), on the Black River. Chalkyitsik is a fly in only community encompassing [8.7 sq. miles of land](#) and [0.3 sq. miles of water](#).

Chalkyitsik has a continental arctic climate, characterized by seasonal [temperature](#) extremes. Winters are long and harsh, and summers warm and short. The average high temperatures, during July, ranges from 65 to 72 °F. The average low temperature during January is well below zero. Extended periods of -50 to -60 °F are common. Extreme temperatures, ranging from a low of -71 to a high of 97 °F, have been measured. Annual precipitation averages 6.5 inches, and annual snowfall averages 43.4 inches. The Black River is ice-free from mid-June to mid-October [but is too shallow for barge service](#).

#### B. AREAS OF POOR AIR QUALITY:

The state of Alaska is not in the DERA programs priorities areas, however they do meet other programmatic priorities. The community of Chalkyitsik has had to put their concerns for air quality aside for several years, due to tight operating budgets that leave little room for raising extra capital [to replace existing](#) generators. Increasing rates to offset replacement costs is not feasible due to the demographics and population size of the village. In an effort to reduce consumption and thereby emissions, we have developed partnerships and information sharing relationships with AEA, IRHA, TCC and Doyon. These partnerships have provided us with resources and expertise to advance our goal of reducing emission. Once the certified engine repower is completed, efforts of the Chalkyitsik Tribal Council can redirect their focus to energy efficiency projects [that further reduce consumption and emissions](#).

#### C. AREAS THAT RECEIVE A DISPROPORTIONATE QUANTITY OF AIR POLLUTION FROM DIESEL FLEETS:

The diesel generators in the power plant run around the clock, thus any improvements in efficiency will have a net positive effect on [emissions](#), fuel consumption [and fuel cost](#). In FY 2014/15, the Chalkyitsik power plant consumed 23,191 gallons of diesel. The fuel cost is \$5.57 per gallon, for a total fuel cost of \$129,125.

Alaska is unique in its diesel use. Power in rural villages is typically generated from diesel in small systems, thus using a disproportionately large quantity of LSD diesel. Although the air quality in rural Alaska is typically quite good, the CVC power plant is located [REDACTED]

[REDACTED] [Heavy thermal inversions](#), seasonal wind directions and topography cause emissions to settle in the village during winter months [creating exceptionally poor](#) air quality [during the winter](#). In summer months, diesel emission, combined with dust from vehicle traffic on dirt roads, provide challenges to the elderly and others community members with [respiratory](#) health [issues](#). Noise pollution is troublesome to students in the school and is a year round concern.

The Chalkyitsik Village Council believes carrying out the certified engine repower implementation plan will result in significant emissions reductions. [Moreover the repower will allow CVC to effectively use its meager funds to implement energy efficiency projects](#) to [further reduce emissions and](#) ensure safe, reliable and cleaner power.

### **Section 3. Benefits to the Community**

If awarded, this grant will assist the Native Village of Chalkyitsik in taking significant action towards meeting goals of reducing community exposure to hazardous air pollutants, and will assist in reducing greenhouse gas emissions, without impacting the economic vitality of the state.

#### **Needs and concerns of community:**

Research shows there is no safe level of exposure to diesel particulate matter. Similar to other rural Alaska communities, Chalkyitsik power generation depends on diesel generators. These generators operate close to homes, workplaces, and the school. The proximity [between generation and the community](#) poses a health risk. Replacing [existing generators](#) will reduce emissions, improved efficiency, and [reduce the health risk](#).

#### **Population affected:**

Chalkyitsik is a community of 74, with 99% being Alaska Native, [REDACTED]

[REDACTED] cultural norms and values of subsistence and living off the lands place our residents in the outdoors year round to both harvest and process food. Degraded infrastructure places increased stress on existing generators. [An accumulation of](#) factors place the living, working and recreation areas of residents in closer proximity to [power plant](#) emissions than those who live in larger centers.

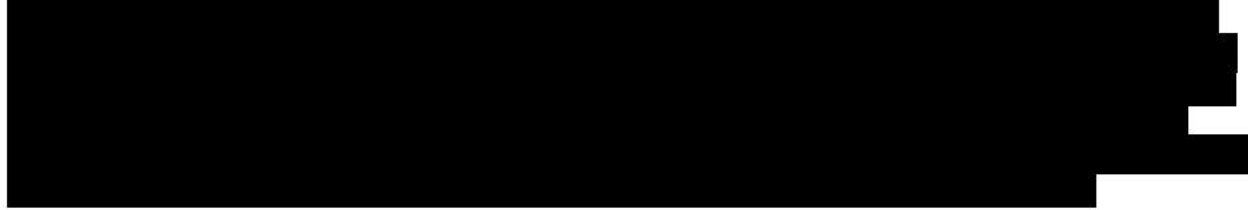
Socioeconomic data indicates the project will benefit community residents in terms of economic savings. According to the U.S. Census Bureau, the median household income in Chalkyitsik is \$32,500 (placing them below the poverty line) and is 2/3 less than the State of Alaska median household income of \$72,237. The cost per kilowatt-hour of electricity is a proposed rate of \$0.95 kWh, which means energy costs account for a significant percentage of household income.

### **Section 4. Partnerships**

This proposal is the product of a community-based, multi-stakeholder collaborative process on energy planning and environmental benefits from energy efficiency. Chalkyitsik Village Council has been working with their regional corporation, Doyon Incorporated, Alaska Energy Authority (AEA), Alaskan Natives Tribal Health Consortium (ANTHC) and Tanana Chiefs Conference (TCC) since early 2014 on a plan to start the process of energy renewal and efficiency for Chalkyitsik as well as communities throughout the interior of Alaska. These proposals, as well as our other emission reduction goals (see Section 2), are the result of leveraging the expertise of the entities above to address community concerns.

More specifically these partnerships have assisted us in providing technical assistance; grant writing, strategic energy planning and feasibility. Should we be selected as a recipient of DERA Program funds, they will be utilized in deployment of the certified engine repower.

Representatives of Chalkyitsik Village Council include:



### **Section 5. Project Sustainability**

As demonstrated in Section 6, the certified engine repower program results in significant emission reductions. Although Chalkyitsik does not have a formal air quality plan, commitments towards addressing air quality issues do exist. The proximity of power plants pose a health risk on their own, however, the cumulative effects of emissions on the local environment, both human and animal, is of great concern to our community. This is due to the almost complete reliance year round upon wild country foods. The replacement of these generators with those that meet more stringent emission requirements will aid in improving air quality, and reduce the cumulative impacts emissions are having on our community and wildlife.

Setting priorities in rural Alaska Native villages is difficult due to the distribution of the population across the state. Only 30% of the population lives in small remote villages, and are made up of primarily Alaska Native off-road communities. [The daily lives of Alaska Native communities are impacted by](#) power generator emissions, residents face disproportionate exposure to air pollution [when compared to](#) residents of urban centers. [In addition,](#) remoteness brings higher costs associated with replacing aged equipment, [thus](#) keep up with rapidly changing [technology that](#) has clear health benefits for residents, [is difficult](#).

[Improved efficiency](#) will require less fuel, reducing emissions, and lower costs for consumers. [With](#) diesel fuel [costing](#) \$5.57 a gallon [any](#) savings is significant. The use of Tier 3 marine generators will increase available recovered heat and reduce community space heating fuel consumption and associated emissions. Additionally, we anticipate that cost savings will affect community moral, and [will be used to implement further](#) energy consumption reduction strategies for the community; in particular, those already in development with the project partners listed above.

### **Section 6. Environmental Results—Outputs, Outcomes and Performance Measures**

#### **A. OUTPUTS AND OUTCOMES:**

The output of this project is the certified engine repower of two diesel generators in the community of Chalkyitsik. The outcome of the project [will](#) improve air quality, and thereby the health and wellness, of the community members of Chalkyitsik, Alaska; a goal of the EPA's 2014-2018 Strategic Plan (Objective 1.2).

In addition to the certified engine repower, this project will [also be](#) used as learning opportunity for other [interior Alaska Tribes](#); via dissemination of the project design, implementation, and the improved

#### **Output:**

- 2 x certified engine repower
- Fact Sheet
- Project Final Report

#### **Outcome:**

- Pollution Reduction Report
- Improved Human Health and Wellness
- Increased Community Engagement

performance data. List serves, websites and outreach events, in the form of emails and fact sheets will provide communications, along with the final reporting requirements set out in Section VI.C of the RFP. Communications will serve as a regional record to be accessed as needed by the public.

Outcomes will be illustrate by comparing historic data already being collected as a part of the Alaska Power Cost Equalization Program, which include annual diesel fuel consumption and power generation, with the date collected after the certified engine repower. We anticipate the outcomes to be similar, if not better, than those indicated by the DEQ (as listed in the tables below) and will indicate the tones of pollution reduced over the lifetime of the new engines.

Quantifying health benefits (improvements to human health, the environmental, local economy, social conditions and over all community wellness) from the installation of new generators will not be quantifiable during the funding period. However, qualitatively it can be said that with the powerhouse located near the community hub (see enclosed map) any reductions in emissions will have a net positive benefit on public health and air quality, and may be seen in outcomes such as; increased community engagement and awareness of air quality projects, as well as buy in for future energy consumption reduction projects.

Anticipated Outputs and Outcomes		
Activities	Outputs	Outcomes
Generators repower of two generators in power plant	Annual fuel consumption reduction = 0 gallons	Annual NOx emissions reduction = 0 pounds

## B. PERFORMANCE MEASURES:

### Oversight of Project:

### Project Management:

- Fiscal Tracking and Reporting: Progress, expenditures, purchases and other expenses allowable in the grant will be tracked and reported on by the tribes finance officer.
- Milestone Tracking and Reporting: Reports will be generated quarterly for Chief and Council, for EPA according to requirements set out in the award, and will show progress on achieving proposed timeline and project outcomes (see timeline in Section 1).
- Emissions tracking: The State of Alaska' Power Cost Equalization Program requires all rural utilities to track diesel fuel consumption and power generation data. This data will be used to track emissions of the new generators, and will be compared to the DEQ data below that projects the results expected with the generator replacement.

### Expected outcomes from the project include:

#### Short-term outcomes –

- Generator replacements will lead to immediate reductions in diesel fuel use and decreased emissions.
- Community wellness will improve with reduced cost of living
- Community interest in energy projects will be fueled.

#### Medium-term outcomes –

- Project success will begin circulating to other Alaska Native villages, and will result in other villages engaging in feasibility studies.

- Community interest will begin on further energy reduction projects, and the tribal council will respond with proposing new projects to pursue.

Long-term outcomes –

- Alaska has the highest fuel costs in the country and, despite the recent fall in fuel prices, fuel costs will undoubtedly rise again. While new and innovative sources of renewable energy are being developed, the need for diesel fuel continues because of its ability to provide steady and reliable power. It is anticipated that the diesel generators used for power in rural communities will continue to be in use for many years. Replacing aging generators with cleaner and more efficient ones now will provide emission reductions and fuel savings for many years to come.
- The village of Chalkyitsik will engage in active energy reduction planning, and engage in energy efficiency projects.
- Health benefits for the residents in the communities of reducing emissions will continue to surface for successive generations.

### Results from EPA Diesel Emission Quantifier: (to be completed and inserted for Chalkyitsik)

#### Results Table

The table below shows the combined results for all vehicle groups and technologies entered for your fleet.<sup>1</sup>

<b><i>Annual Results (short tons)</i></b>	<b>NOx</b>	<b>PM2.5</b>	<b>HC</b>	<b>CO</b>	<b>CO2</b>	<b>Fuel<sup>2</sup></b>
Baseline of Entire Fleet	21.291	0.563	0.523	3.484	171.6	15,461
Baseline for Retrofitted Engines	0.000	0.000	0.000	0.000	0.0	0
Amount Reduced	0.000	0.000	0.000	0.000	0.0	0
Percent Reduced	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

<b><i>Lifetime Results (short tons)</i></b>						
Baseline of Entire Fleet	255.493	6.759	6.271	41.808	2,059.4	185,532
Baseline for Retrofitted Engines	0.000	0.000	0.000	0.000	0.0	0
Amount Reduced	0.000	0.000	0.000	0.000	0.0	0
Percent Reduced	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

<b><i>Lifetime Cost Effectiveness (\$/short ton reduced)</i></b>						
Capital Cost Effectiveness (material & installation costs only)	\$0	\$0	\$0	\$0	\$0	
Total Cost Effectiveness (includes all project costs)	\$0	\$0	\$0	\$0	\$0	

<sup>1</sup> Emissions from the electrical grid are not included in the results.

<sup>2</sup> Fuel is reported in gallons; fuels other than ULSD have been converted to ULSD-equivalent gallons.

<b><i>Remaining Lifetime</i></b>	Chalkyitsik PG: Auxiliary 240 hp:	12.0 years
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### Section 7. Programmatic Capability and Past Performance

The Chalkyitsik Village Council (CVC) is a federally recognized tribe, consisting of a seven-member Council and 12 staff. The CVC is the local governing body within the boundaries of Chalkyitsik. Council positions include the first chief (two year term) and six members (annual terms). Tribal council elections are held every two years. Those interested in applying for a position must be a current tribal member and have lived in Chalkyitsik for the prior year.

#### A. PAST PERFORMANCE:

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]

**B. REPORTING REQUIRMENTS:**

The Tribe acts in both a tribal and city capacity, and as such administers numerous grants and contracts. The CVC staff and community are very engaged in daily operations. Combined with a seasoned Chief, [REDACTED], who has had several terms in tribal office and state legislature, Chalkyitsik reporting on grant funds has been without incident.

**C. ORGANIZATIONAL EXPERIENCE:**

The Chalkyitsik Village Council adopted Tribal By-Laws, Constitution, and drafted Tribal Governance Codes. Since the community does not have a local city government, the Tribe also operates and manages the following utility services: Water Treatment Plant, Recycle Center, Washeteria, Piped Water and Sewer (for the school, tribal offices, and clinic), Landfill, Electricity supply and distribution, Equipment Rentals, Building Rentals.

Chalkyitsik Village Council understands project phases and executes its projects with a conceptual design and proceeding through feasibility study, permitting (if necessary), site control, final design, procurement, shipping, mobilization, construction, reporting and close-out. With every project awarded [CVC has](#) implemented improvements to construction methods, administrative practices and operating procedures to ensure each project is a success.

**D. STAFF AND RESOURCES:**

[REDACTED]

## Section 8. Budget Narrative and Detail

### A. EXPENDITURE OF AWARDED GRANT FUNDS:

TCC staff and specifically the Rural Energy Department has assisted with 2 diesel generator replacement projects over the past 5 years utilizing EPA funds. All costs associated with those projects have been vetted and quotes sourced and received from various generator replacement technicians that have been utilized in the past. This success history of similar projects, lends to our confidence in the numbers laid out in each category.

### B. BUDGET NARRATIVE:

Personnel and workers compensation [REDACTED]

[REDACTED] Equipment cost of \$117,250 will be used for the purchase of two John Deere 4045 Tier 3 generators. Supplies cost of \$80,105 will be used to ship the new generators to Chalkyitsik, remove the existing generators, install and commission the new generators, install monitoring equipment and a heat recovery piping system. The cost to pull out the generators is based on previous projects that have taken place, and includes the decommissioning of generators according to EPA requirements. Contractual costs are related to shipping of the generators from Anchorage to Chalkyitsik, via truck and airplane. Due to out remote location, these numbers are based upon frequent use of these services by CVC and posted rates by suppliers. Other costs are the in-kind contribution from TCC's Rural Energy Coordinator, as lined out in their letter of support, in the amount of \$4800. Lodging and equipment rental are provided through CVC infrastructure. The indirect cost is calculated as [REDACTED]

### C. BUDGET TABLE:

Note: The itemized budget reflects applicant's 25% cost share for Certified Generators Repower pursuant to Section III.B.1.d of the RFP. The cost share amount will be provided by the Chalkyitsik Village Council general funds.

**Budget Table**

	EPA Funding	Cost-Share
Personal		
[REDACTED]		[REDACTED]
[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]		
[REDACTED]		[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]
Travel		
TOTAL TRAVEL	\$-	\$-
Equipment		
1 2013 John Deere 4045TFM85 67ekW Prime Marine Tier 3 gensets @ \$53,500 each	\$53,500	
1 2013 John Deere 4045AFM85 101ekW Prime Marine Tier 3 genset @ \$63,750 each	\$63,750	
TOTAL EQUIPMENT	\$117,250	\$-
Supplies		

Misc. Fitting and pipe	\$200	\$1,800
<b>TOTAL SUPPLIES</b>	<b>\$200</b>	<b>\$1,800</b>
Contractual		
Removal of two generators. Installation, integration and commissioning of two new replacement generators.	\$68,105	\$35,335
Truck Rental (Anchorage-Fairbanks); 1 trip-transport 2-generator @ 8,000 lbs.	\$2,000	
Charter Flight (Fairbanks-Chalkyitsik); 1 trip- transport 2-generator @ 8,000 lbs.		\$10,000
<b>TOTAL CONTRACTUAL</b>	<b>\$70,105</b>	<b>\$45,335</b>
Other		
In Kind management assistance from Tanana Chiefs Conference Energy Coordinator - 60 hrs. @ \$80/hr.		\$4,800
Lodging for 2 contractor & tech for generator installation x 110 each x 21 days-Rental 2 bedroom (CVC owned)		\$4,620
Loader (equipment rental) used to hoist old gen sets and new gen sets in and out of the power house @ \$500 per day x 5 days		\$2,500
<b>TOTAL OTHER</b>	<b>\$-</b>	<b>\$11,920</b>
Indirect Charges		
		\$-
<b>TOTAL FUNDING</b>	<b>\$215,688</b>	<b>\$62,575</b>
<b>TOTAL PROJECT COST</b>	<b>\$306,397</b>	

### **Section 9. Applicant Fleet Description**

The applicant proposes a certified generator repower of two stationary, non-road diesel generators used for energy production in the power plant in Chalkyitsik, Alaska. The applicant intends to procure two generators, all manufactured before 2013 and EPA Tier III certified: John Deere 4045HF485 generators, PE4045TFM85.1KC, 1800 RPM KC SAE#4/#10 TIER 3 generators. This is to replace the current fleet outlines in the fleet description spreadsheet.

#### **Attachments:**

1. Letter of support – Doyon Limited
2. Letter of support –Tanana Chiefs Conference
3. Letter of Support – Alaska Energy Authority
4. Letter of support –Interior Regional Housing Authority
5. Maps (2) of Project Location
6. Power Plant Equipment Layout Diagrams (1)
7. Two Quotes from Alaska Diesel Electric
8. Quote from Northern Generation Power
9. Photographs (5) of existing power generation facilities